

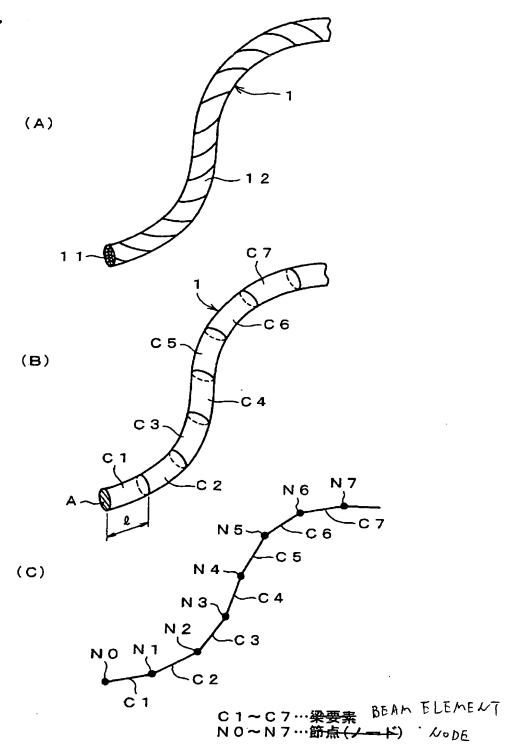
RESTRAINED DEGREES OF FREEDOM CORRUGATED ROUND-HOLE CLAMP CORRUGATED LONG-HOLE CLAMP ROTATIONAL RESTRAINT COMPLETE RESTRAINT COMPLETE FREEDOM X-AXIS TRANSLATION Y-AXIS TRANSLATION Z-AXIS TRANSLATION ROUND-HOLE CLAMP SUPPORT MEMBER LONG-HOLE CLAMP X-AXIS ROTATION Y-AXIS ROTATION **Z-AXIS ROTATION** BRANCH POINT CONNECTOR DISABLED ENABLED

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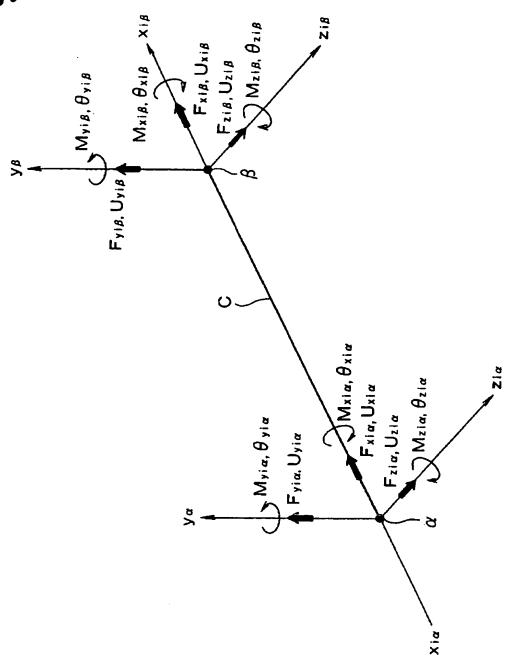
Fig. 4

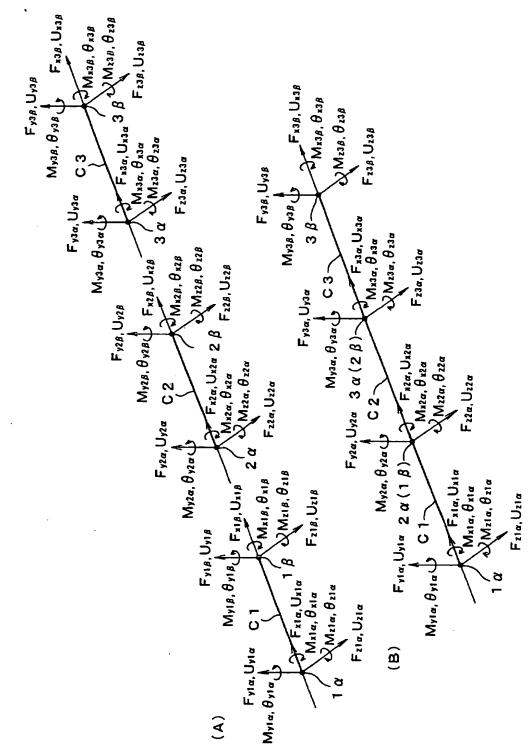


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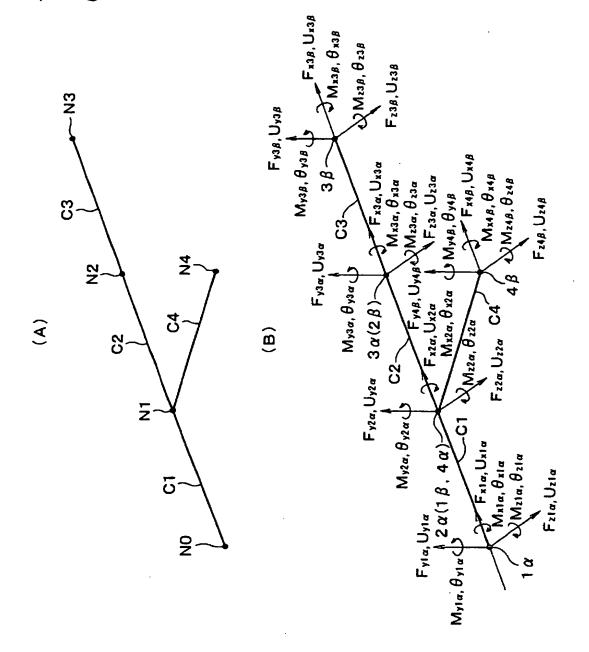
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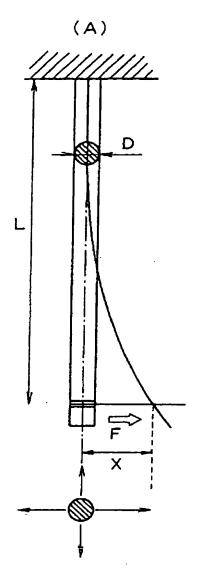
Fig.5

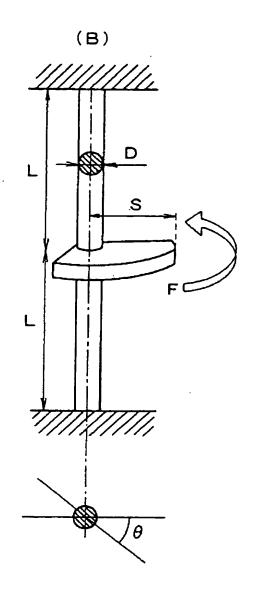


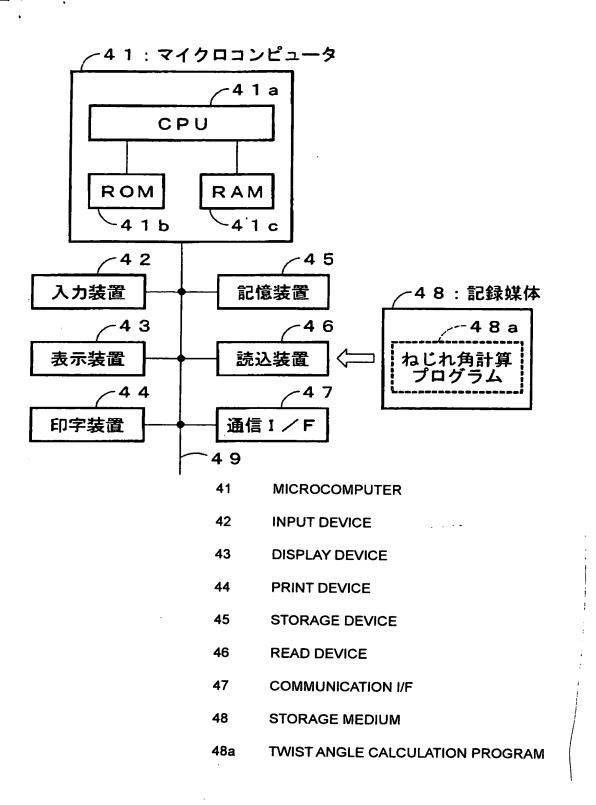


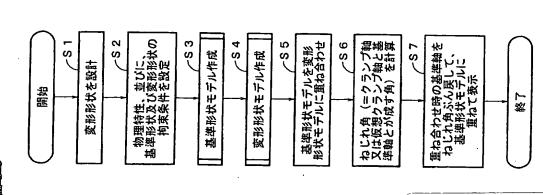
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DESIGN DEFORMED SHAPE

ည 8

START

Fig. 10

PROPERTIES, AND RESTRAINT CONDITIONS PHYSICAL

P

REFERENCE SHAPE AND DEFORMED SHAPE

PRODUCE REFERENCE SHAPE MODEL

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PRODUCE DEFORMED SHAPE MODEL

SUPERIMPOSE REFERENCE SHAPE MODEL ON DEFORMED SHAPE MODEL SS

CALCULATE TWIST ANGLE (= ANGLE FORMED BY CLAMP AXIS OR VIRTUAL 8

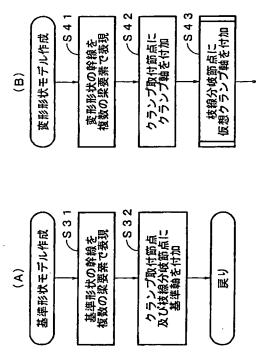
CLAMP AXIS AND REFERENCE AXIS)

RETURN REFERENCE AXIS AT SUPERIMPOSITION BY TWIST ANGLE, AND S7

DISPLAY WITH BEING SUPERIMPOSED ON REFERENCE SHAPE MODEL

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PRODUCTION OF REFERENCE SHAPE MODEL

EXPRESS TRUNK WIRE OF REFERENCE SHAPE BY PLURAL BEAM

ELEMENTS

ADD REFERENCE AXIS TO CLAMP ATTACHMENT NODE AND BRANCH WIRE

BRANCH NODE

FIG. 11(B)

RETURN

PRODUCTION OF DEFORMED SHAPE MODEL

EXPRESS TRUNK WIRE OF DEFORMED SHAPE BY PLURAL BEAM S41

ELEMENTS

戻り

ADD CLAMP AXIS TO CLAMP ATTACHMENT NODE **S42**

ADD VIRTUAL CLAMP AXIS TO BRANCH WIRE BRANCH NODE S43

S 432

接線平面上で 幹線接線ベクトルと 直交するベクトルを仮想 クランプ軸として算出

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仮想クランプ軸算出

ပ္

幹線接線ベクトル及び 枝線接線ベクトルを含む 接線平面を作成

CALCULATION OF VIRTUAL CLAMP AXIS

PRODUCE TANGENT PLANE CONTAINING TRUNK WIRE TANGENT VECTOR S431

AND BRANCH WIRE TANGENT VECTOR

CALCULATE VECTOR WHICH IS PERPENDICULAR TO TRUNK WIRE

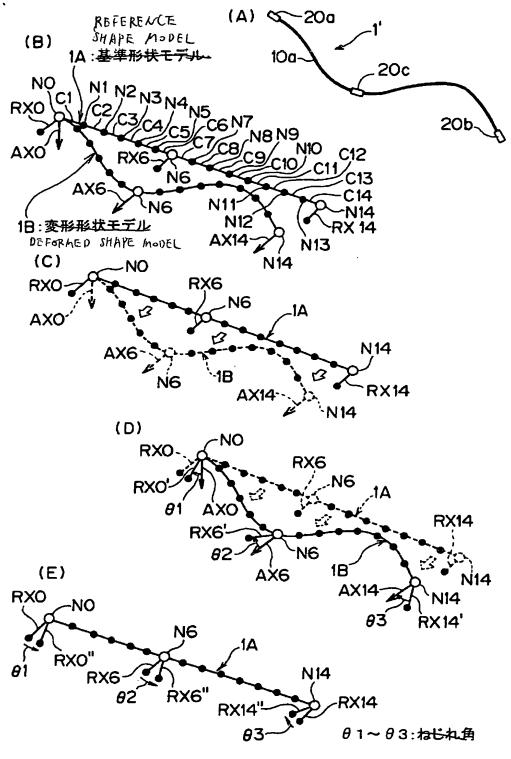
FANGENT VECTOR IN TANGENT PLANE, AS VIRTUAL CLAMP AXIS

RETURN

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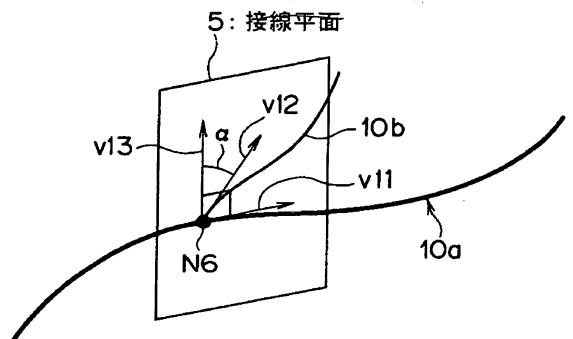
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戻り



THUST ANGLE

TANGENT PLANE



201 N က Ŋ ဖ 4 0 0 0 0 0 大に対応する拘束 有限要素モデル に適用 N 物理特性及び拘束条件を設定 N 0 0 N 有限要素モデルを作成 ねじれ角を基準形状と 共に表示 ഗ ഗ ഗ ഗ S ഗ 変形形状を設計 ねじれ角を計算 開始 基準形状に 条件を、^本

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CORRESPONDING

APPLY RESTRAINT CONDITIONS

REFERENCE SHAPE, TO FINITE ELEMENT MODEL

CALCULATE TWIST ANGLE

S205 S206

PRODUCE FINITE ELEMENT MODEL

SET PHYSICAL PROPERTIES AND RESTRAINT CONDITIONS

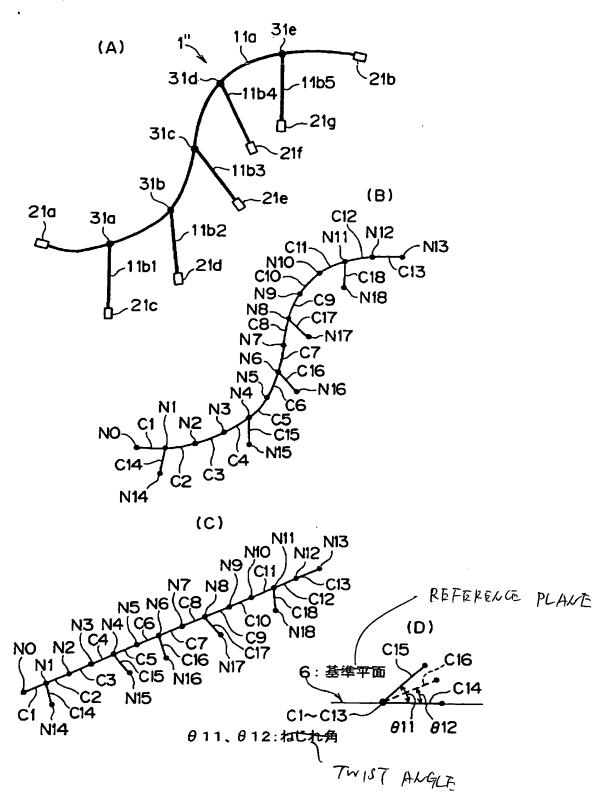
DESIGN DEFORMED SHAPE

START S201 S202 S203 S203 S204 DISPLAY TWIST ANGLE TOGETHER WITH REFERENCE SHAPE

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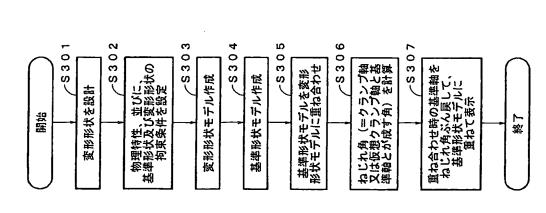
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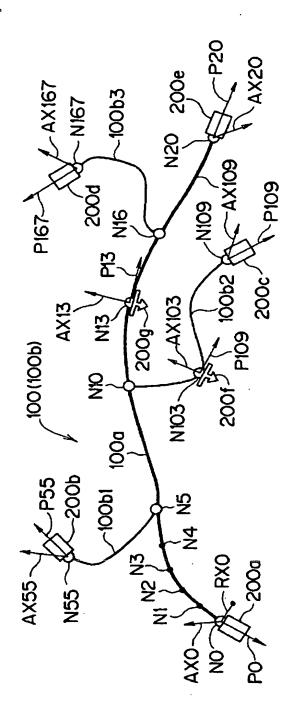
F3.16

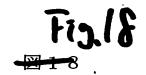
FIG. 16 START

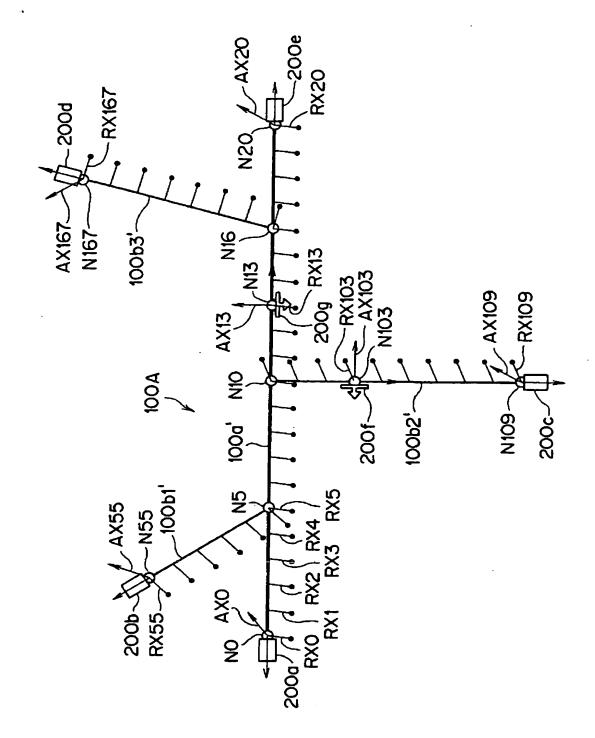


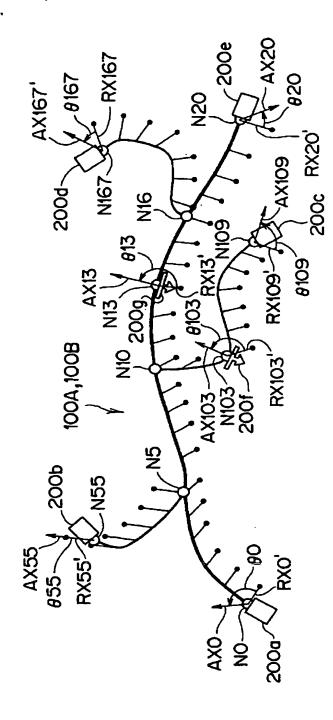
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SUPERIMPOSE REFERENCE SHAPE MODEL ON DEFORMED SET PHYSICAL PROPERTIES, AND RESTRAINT CONDITIONS OF CALCULATE TWIST ANGLE (= ANGLE FORMED BY CLAMP AXIS OR RETURN REFERENCE AXIS AT SUPERIMPOSITION BY TWIST ANGLE, AND DISPLAY WITH BEING SUPERIMPOSED ON REFERENCE SHAPE MODEL PRODUCE REFERENCE SHAPE MODEL PRODUCE DEFORMED SHAPE MODEL REFERENCE SHAPE AND DEFORMED SHAPE VIRTUAL CLAMP AXIS AND REFERENCE AXIS) DESIGN DEFORMED SHAPE SHAPE MODEL S301 **S302** S303 **S304** S305 **S306** \$307 5









80、813、820、855、8103、8109、8167:ねじれ角

TWIST ANGLE

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FIG. 20 START S401 S402

> -5402 \$401 -5403 -5404 -5405 -S407 -S 4 0 物理特性、並びに、 基準形状及び変形形状の 拘束条件を設定 基準形状モデルを変形 形状モデルに重ね合わせ ねじれゼロ面を クランプ軸と共に表示 变形形状モデル作成 基準形状モデル作成 ねじれゼロ面設定 変形形状を設計 超器 黎了

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SUPERIMPOSE REFERENCE SHAPE. MODEL ON ..: DEFORMED

PRODUCE DEFORMED SHAPE MODEL
PRODUCE REFERENCE SHAPE MODEL

DISPLAY TWIST-FREE PLANE TOGETHER WITH CLAMP AXIS

SET'TWIST-FREE PLANE

S406

S407 END

SHAPE MODEL

S405

S404

SET PHYSICAL PROPERTIES, AND RESTRAINT CONDITIONS OF

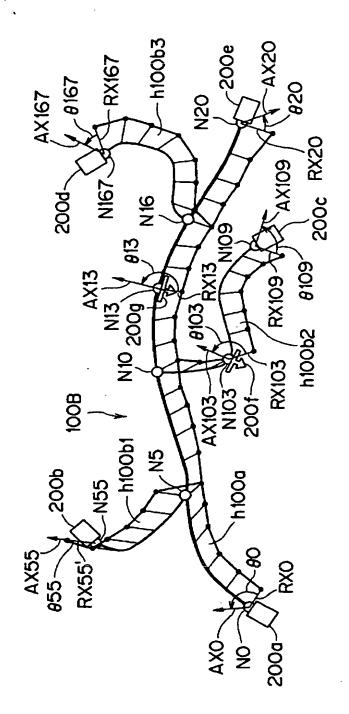
DESIGN DEFORMED SHAPE

REFERENCE SHAPE AND DEFORMED SHAPE

S403

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TWIST - FREE PLANE

h100a、h100b1、h100b2、h100b3:ねじれが口面

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